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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,722

04/15/2004

Tien-Hsin Chao

G&C 176.18-US-U1

6728

22462

7590

12/28/2005

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EXAMINER

ASSAF, FAYEZ G

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/824,722

**Applicant(s)**

CHAO ET AL.

**Examiner**

Fayez G. Assaf

**Art Unit**

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 12-15 and 21-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-11, 16-20 and 26-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/15/04; 8/30/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of Species II: claims 6-11, 16-20 and 26-31 in the reply filed on 6/17/2005 is acknowledged. The traversal is on the ground(s) that "both claim species are directed towards steering the reference beam." And, "there is no serious burden on the Examiner to collectively examine the different claim Groups of the subject application." This is not found persuasive because of the restriction set forth in the Office Action mailed 5/31/2005 is based on the claimed structural differences between the various species and not on their similarities. Continued search and examination of the claim(s) directed to a non-elected species including claims having substantially different structural limitation is a prima facie showing of burden. Applicant may overcome the requirement for restriction by presenting an allowable generic or by providing a clear admission on the record that the claim(s) drawn to a given no-elected species is not patentably distinct from the elected species.

The requirement is still deemed proper and is therefore made **FINAL**.

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***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35

U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6-11, 16-20 and 26-31 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation, in independent claims 6, 16 and 26, that the means/laser diode emitting two dimensional plane wave constitutes a new matter.

This new language has not been given patentable weight.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

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differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-11, 16-20 and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaji et al. (US 6,088,321) in view of Gladney et al. (US 2004/0090899 A1).

Regarding claims 6, 7, 8, 10, 16, 17, 19, 26, 27, 28 and 30, Yamaji discloses a holographic memory system comprising: (a) a photorefractive crystal (10 of Fig. 10) configured to store holograms; (b) a single laser diode (1 of Fig. 10) configured to emit a collimated laser beam to both write to and read from the photorefractive crystal; and (c) one or more mirrors configured to steer a reference beam (5 of Fig. 10), split from the collimated laser beam, at high speed to the photorefractive crystal. Yamaji does not teach the mirror being MEMS.

However, Gladney teaches such a mirror for scanning the reference beam (see Fig. 9).

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to utilize the mirror of Gladney in the invention of Yamaji since the MEMS mirror is efficient compact and consumes low power.

Regarding claim 9, 18 and 29, Yamaji or Gladney disclose the MEMS mirror being varied by a small increment with respect

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to each new data page to specifically orient the reference beam to the photorefractive crystal is an angular multiplexing scheme.

Regarding claim 11, 20 and 31, Yamajai and Glandly inherently disclose the holographic memory system being used with both analog and digital holograms.

### ***Response to Arguments***

Applicant's arguments filed 10/12/2005 have been fully considered but they are not persuasive.

Applicant relied on Figure 11 to support the newly added language to the claims. The argument is completely erroneous: First, the argument is directed to prove that the object beam and the reference beam are both two dimensional plane wave beams while the claims call for a laser emitting itself a two dimensional plane wave; secondly, one of ordinary skill in the art can never ascertain that the reference beam is a plane wave just based on the Figures; and thirdly, the meaning of a "line laser beam" is vague.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed

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invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it is advantageous to utilize the MEMS mirror since it is efficient compact and consumes low power as it is known in the prior art.

#### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Fayez G. Assaf  
Primary Examiner  
Art Unit 2872

12/26/2005